

**The Academic Cost of Discipline:
The Relationship Between Suspension/Expulsion and School Achievement**

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Abstract

Consistent with the disciplinary philosophy of *zero tolerance*, use of exclusionary discipline is contingent upon a belief that removing certain children from school is necessary or helpful in order to maintain a school climate conducive to learning. Yet, a potentially paradoxical consequence of school removal is the inherent risk of student opportunity to learn, particularly for student groups with relatively high disciplinary rates (e.g. African American students). This study described rates of school discipline and achievement in one Midwestern state disaggregated by race and controlling for poverty, and examined the relationship between school discipline and achievement while accounting for socio-demographic influences. The findings of this study suggest that school usage of suspension and expulsion is negatively related to academic achievement independent of socio-demographic influences, and argues that exclusionary discipline does *not* contribute to improved learning outcomes.

The Academic Cost of Discipline:

The Relationship between Suspension/Expulsion and School Achievement

Out-of-school suspension and expulsion are widely used in our schools and their frequency is increasing. Research has found that suspension and expulsion may be the most frequently used disciplinary tools for office referrals (Bowditch, 1993; Mansfield & Ferris, 1992; Rose, 1988; Skiba, Peterson, & Williams, 1997; Uchitelle, Bartz, & Hillman, 1989); Skiba et al. (1997) reported, for instance, that up to 33% of all disciplinary referrals in a middle school in an urban district were met with out-of-school suspension. National data estimate that about 7% of the school population missed at least one day of school due to being suspended or expelled, double the number since the 1970's (Wald & Losen, 2003).

Large and widening racial disparities are evident in the composition of students removed from school. In 2003, while representing 17% of the student population, African American students represented 36% of the out-of-school suspension population, and 32% of the expelled population (U.S. Department of Education, 2004). African American students are 2.8 times as likely to be suspended out-of-school, and 2.5 times as likely to be expelled compared to White students (U.S. Department of Education, 2004). These disproportionate rates are higher than in the 1970's, when African Americans were about 2 times as likely to be suspended/expelled (Wald & Losen, 2003). Previous studies (Skiba, Michael, Nardo, & Peterson, 2002; Wu, Pink, Crain & Moles, 1982) indicate that racial disparities in out-of-school suspension cannot be accounted for by socioeconomic disadvantage or differential rates of misbehavior.

The emergence of the zero tolerance disciplinary paradigm has to some extent linked the use of school suspension and expulsion with the philosophical approach of zero tolerance (Skiba & Peterson, 1999; Skiba & Rausch, 2006). Skiba and Rausch (2006) have argued that there are assumptions to the use of suspension and expulsion that are universal to all disciplinary approaches; for example, one would expect that any effective disciplinary procedure would have among its goals to ensure the safety of students and teachers, and create a climate conducive to learning. There are also however, assumptions connected with zero tolerance that appear to be unique to that approach. Zero tolerance policies and procedures presume, for example, that removing a student from school will have a deterrent effect on future misbehavior for the offending student and his/her peers (Ewing, 2000) and that the removal of certain students will yield a more productive learning climate for those students that remain (Public Agenda, 2004).

It cannot be assumed that all instances of the use of out-of-school suspension and expulsion represent applications of zero tolerance philosophy. School administrators appear to vary widely in their support of the use of zero tolerance (Advancement Project/Civil Rights Project, 2000; Mukuria, 2002). While there are ethnographic studies and principal surveys suggesting that schools with administrators expressing support for zero tolerance tend to have higher rates of disciplinary exclusion (Advancement Project/Civil Rights Project, 2000; Skiba et al., 2003), it may not be that all suspension and expulsion incidents are explicitly tied to or indicate support for zero tolerance.

Regardless of the extent of overlap between the practice of disciplinary exclusion and the philosophy of zero tolerance, however, it can be assumed that the use of out-of-school suspension and expulsion share certain goals that can be conceived of as universal

to school disciplinary approaches (Skiba & Rausch, 2006). In particular, one would expect that the use of exclusionary discipline is contingent upon a belief that removing certain children from the learning environment for some period of time is necessary or helpful in order to maintain a school climate conducive to learning. Indeed, the evidence-based criteria applied under *No Child Left Behind* (No Child Left Behind Act Fact Sheet, 2001) suggest that any educational interventions used in schools must be empirically validated with respect to improved school achievement or other positive educational outcomes.

It is reasonable then to explore the extent and direction of the contribution of exclusionary discipline—out-of school suspension and expulsion—to school achievement outcomes. In this study, we investigated the relationship between exclusionary school discipline and measures of achievement at the school level. In particular, this investigation increased the level of control afforded from previous investigations by accounting for socio-demographics in exploring the discipline/achievement relationship. To begin, we consider two possible competing hypotheses concerning the relationship between exclusionary discipline and school-wide achievement outcomes, and review the literature that might support or contradict those hypotheses.

School Achievement and School Discipline: Two Hypotheses

School suspension and expulsion might be conceptualized as contributing either positively or negatively to school achievement. Consistent with the philosophy of zero tolerance (Ayers, Dohrn, & Ayers, 2001; Ewing, 2000; Noguera, 1995) student removal might be expected to positively affect student learning by removing disruptive students from school, thereby protecting and preserving the learning environment for those who

remain. Student removal might also improve the learning environment by functioning as a deterrent: by severely punishing student misbehavior, the probability of future student misbehavior, for both the offending student and his/her peers, will diminish. Ewing (2000) argues that zero tolerance “appropriately denounces violent student behavior in no uncertain terms and serves as a deterrent to such behavior in the future by sending a clear message that acts which physically harm or endanger others will not be permitted at school under any circumstances.”

A competing hypothesis is that frequent student removal may have a negative influence on student learning, by reducing opportunity to learn (Advancement Project/Civil Rights Project, 2000). One of the most consistent and widely replicated findings of the past 30 years is that increased opportunity for student learning is associated with high academic achievement and large academic achievement gains (Brookover, Erickson, & McEvoy, 1997; Brophy, 1988; Brophy & Good, 1986; Carter, 1984; Cooley & Leinhardt, 1980; Fisher et al., 1981; Greenwood, Horton, & Utley, 2002; Hattie, 2002; Reynolds & Walberg, 1991; Stallings, Cory, Fairweather, & Needles, 1978; Wang, Haertel, & Walberg, 1997). Further, comprehensive school reform efforts have consistently documented the academic effectiveness of programs intended to increase student time spent engaged in learning (see e.g. Borman, Hewes, Overman, & Brown, 2003 and Zurawsky, 2004). Thus, removing students from the opportunity to learn, even when intended for disciplinary purposes, could negatively influence achievement by reducing academic learning time.

In the following sections we consider data relevant to each of these two competing hypotheses: a) exclusionary school discipline can be expected to improve the

learning climate and hence academic achievement through a deterrent effect on student misbehavior, vs. b) that exclusionary discipline may threaten academic achievement by reducing opportunity to learn.

Protecting the Learning Environment/Deterring Student Misbehavior

Zero tolerance advocates suggest that the use of suspension and expulsion can improve the learning climate by removing troublemakers or deterring others from misbehavior (Burke & Herbert, 1996; Ewing, 2000). There is, however, little available research and no published evidence in peer reviewed journals that has demonstrated a positive impact of student removal on student learning or academic achievement. In an Educational Testing Service (ETS) technical report, Baron, Coley, and Wenglinsky, (1998) reported that schools with students reporting more frequent use of severe punishment also had lower student-reported percentages of offenses, and that lower ratings of student-reported offenses were positively related to measured academic achievement gains. It is important to note, however, that the measure of offenses as reported by students in this study was confounded, since offenses were defined by the researchers as including both student behaviors (e.g., # of times in a fight at school) and school punishments (e.g. # in-school suspensions). Thus the reported relationships between offenses, punishments, and achievement may be trivial, since school punishments were in effect included in both the offenses and punishments variables.

One implied purpose of severe punishment is the potential deterrent effect for future misbehavior, both for the offending student and others who may witness that punishment (Noguera, 1995). While the theory is intuitively appealing, there is as yet no evidence of an actual deterrent effect associated with disciplinary exclusion, that is, a

reduction in disruptive behavior as a result of the application of out-of-school suspension. Rather, studies of suspension (Bowditch, 1993; Costenbader & Markson, 1998; McCarthy & Hoge, 1987; Raffaele Mendez, 2003; Tobin, Sugai, & Colvin, 1996) have found relatively high rates of repeat offending among those who are suspended out of school. In a study of middle school discipline records, Tobin et al. (1996) found that students who were suspended at the beginning of 6th grade were *more likely* to have discipline problems for the next four terms. This led the authors to conclude that for some students “suspension functions as a reinforcer (variable interval schedule) rather than as a punisher” (p. 91). Similarly, a longitudinal investigation (Raffaele Mendez, 2003) revealed that the strongest predictor of a middle school student’s number of out-of-school suspensions was the number of out-of-school suspensions she or he received in late elementary school (4th and 5th grade).

Limiting Student Opportunity to Learn

To what extent might the use of suspension and expulsion limit or reduce student opportunity to learn? Descriptive studies, multivariate analyses, and teacher surveys (Davis & Jordan, 1994; Public Agenda, 2004; Scott & Barrett, 2004) suggest that relatively large amounts of time are spent on discipline-related matters in some schools. This in turn might be expected to reduce student opportunity to learn both directly and indirectly, since the time teachers and administrators spend on disciplinary problems is time not devoted to academic instruction or improving school climate. One study of an urban elementary school, for instance, estimated that suspended students missed 462 hours of instructional time in one year alone (Scott & Barrett, 2004). Further,

administrators in this study spent an estimated 160 hours on disciplinary office referrals and suspensions during this year.

Investigations of suspension/expulsion and academic achievement have reported a negative relationship. In an analysis of one school district over a two-year period, Morrison and D'Incau (1997) found that students recommended for expulsion on average had relatively low grades and below average percentile scores in reading, math, and language. Raffaele Mendez (2003) found a negative relationship between a student's total suspensions in 6th grade and his/her achievement in math and reading in 7th and 8th grade. Finally, in a state-level analysis, Skiba et al. (2003) found that a state's suspension rank was negatively related to their National Assessment of Educational Progress (NAEP) achievement rank in math, writing, and reading.

Without accounting for the influence of socio-demographic variables that may explain the relationship between discipline and achievement, however, it is difficult to interpret these simple correlations. It is possible, for example, that socio-demographic disadvantage may create conditions that result in both higher suspension or expulsion *and* lower achievement. Few investigations have attended to these influences and the results of those investigations have not been entirely consistent. In a multivariate analysis predicting achievement for African American males, Davis and Jordan (1994) found that a school's emphasis on discipline and the number of suspensions a student received negatively predicted achievement in mathematics, science, and history even when controlling for a number of other variables including socio-economic status. Investigating disciplinary outcomes in one school district, Raffaele Mendez, Knoff & Ferron (2002), reported strong negative correlations between the school suspension rate and achievement

scores in reading, mathematics, and writing at both the elementary and secondary school level. After controlling for economic and demographic influences, only the relationship between suspension and writing at the secondary level remained significant, however. Thus, while a negative relationship between the use of exclusionary school discipline and achievement outcomes has been consistently documented, the literature is not sufficient to rule out the influence of socio-demographic variables as explaining that relationship.

Summary and Purpose

In sum, the predominant rationale for using suspension and expulsion to maintain school discipline focuses on maintaining the integrity of the learning climate, but the data are as yet unclear about how disciplinary removal contributes to school-wide achievement outcomes. Evidence that exclusion is positively related to improved outcomes, either by removing sources of disruption to the learning climate or through a deterrent effect, is weak at best. The possibility that school removal may be associated with negative academic outcomes, perhaps through loss of instructional time, is more consistent, with negative correlations between suspension and achievement reported in general and for African American males in particular. Yet the data are clearly emergent, and the lack of attention in most previous studies to socioeconomic and demographic variables that may influence both discipline and achievement limit the extent to which one can draw firm conclusions concerning the relationship of suspension and expulsion to a school's academic achievement.

In this study, we used school-level data on disciplinary exclusion and academic achievement across one Midwestern state to examine the relationship between achievement, race, and discipline while explicitly accounting for the influence of socio-

demographic variables. Descriptive data examine racial differences in rates of suspension, expulsion, and achievement, and by school level (i.e., elementary and secondary schools) and school variation in socioeconomic disadvantage. Ordinary least squares (OLS) regression was used to address the relationship between disciplinary exclusion and school achievement while holding school socioeconomic status and other demographic indicators constant.

Method

Data Sources

The data for this study included records for all public elementary and secondary schools serving students in grades one through twelve in one Midwestern state for the 2002-2003 school year. All kindergarten or post 12th grade data were excluded from this analysis. Disciplinary, achievement, and socio-demographic data were downloaded from the state Department of Education database. The school functioned as the unit of analysis in all analyses. All public schools in this Midwestern state are required by state statute to report suspension and expulsion data by race to the state Department of Education annually. Disciplinary and achievement data for Asian/Pacific Islander and American Indian racial subgroups are not reported in this study to the extremely low number of schools reporting data for these subgroups.

Variables Studied

Discipline variables. School discipline is represented by out-of-school suspension (OSS) or expulsion (EXP) incident rates, for the entire school and disaggregated by racial group, for infractions committed by students not receiving special education services. Incident rates represent the total incidents of out-of-school suspension or expulsion per

one hundred students, and were calculated by dividing the total number of suspensions or expulsions by the school enrollment, and multiplying by 100.

Achievement variables. Average school achievement is represented by the percent of tested students not receiving special education services who scored at proficient or higher in both the English/Language Arts and Math components of the state accountability test.¹ These data were also disaggregated by racial subgroup. For confidentiality purposes established by state policy, schools reported student racial subgroup achievement data only if that school tested 10 or more students in that group.

Socio-demographic variables. Three socio-demographic variables that could explain any relationship between achievement and discipline were used in these analyses:

- *School Type:* All schools were classified as either elementary or secondary. Schools were classified as elementary if a majority of their enrolled students were in grades one through five. Secondary schools collapse middle schools (grades six through eight) and high schools (grades nine through twelve). Most (98.3%) schools in this state served students in grades one through five, six through eight, or nine through twelve.²
- *Percent Minority:* The percent of minority students is the sum total of non-Asian and non-White students in the school, divided by the school's total enrollment.
- *Poverty:* Poverty represents the percent of students receiving federally subsidized school lunch (free or reduced). Eligibility for the National School Lunch Program is a widely used indicator of student poverty because it is based on family income. At the school level, the percentage of students eligible for free or reduced-price

lunches is a more accurate measure of a school's level of need than is general community income (FCC 97-157 ¶ 509).

Data Analysis

Two OLS regression models were constructed for this analysis. The first model predicted school achievement from two blocks: Block A included only rates of out-of-school suspension, followed by Block B, which included three variables that could explain the relationship (i.e., poverty, percent minority, and elementary or secondary school classification). Complete data were available for 1,651 of the 1,920 public, non-charter elementary and secondary schools in the state system, of which 955 (57.8%) were elementary and 696 (42.2%) were secondary.

The second OLS model predicted achievement from rates of out-of-school suspension and rates of expulsion (Block A), followed by the same socio-demographic variables in the first model (Block B). Only schools with at least one expulsion incident were included in the analysis. Complete data were available for 635 schools of which 69 were elementary (10.87%) and 566 were secondary (89.13%).

Assumptions of multiple regression (Berry & Feldman, 1985; Lewis-Beck, 1980; Tabachnick & Fidell, 2001) appear to not be violated. The plot of residuals appeared to form a random cloud (constant variance) around values of the predicted dependent variable although there was slight convergence of residuals at higher levels of the predicted value. The convergence was not marked, however, so significance tests remain valid (Bohrnstedt & Carter, 1971). Further, the Kolmogorov-Smirnov test of multivariate normality was not significant. The Durbin-Watson test of independence was close to 2 and not significant. The assumption of non-multicollinearity was not violated, as none of

the correlations between predictor variables exceeded +/- .70. No significant outliers were present in either model, using a criteria of a studentized residual value greater than +/- 3.0 and a Cook's distance value greater than .05 (Tabachnick & Fidell, 2001).

Results

Discipline and Achievement by Race and School Type

Three 2 x 4 analysis of covariance (ANCOVA) models were used to describe and test the relationship between school type, race, and their interaction with discipline and achievement variables after adjusting for school poverty variability. The incident rate for each racial group in out-of-school suspension, expulsion, and percent passing the state accountability examination served as the dependent variables in the three analyses respectively (e.g. the dependent variable for out-of-school suspension contained school incident rates for White, Hispanic, Multiracial, and African Americans). Two levels of school type (elementary or secondary) and four levels of race (White, African American, Hispanic, or Multiracial) served as the grouping variables (i.e., independent variables) for each analysis. Bonferroni adjusted multiple comparisons (experiment wise for each ANCOVA was set at $\alpha = .05$) with Games-Howell post hoc tests ³ were used to test estimated mean differences.

Table 1 presents rates of out-of-school suspension and expulsion, disaggregated by race and school level, adjusted for percent of students eligible for free or reduced lunch at the school level. Results indicate that, after accounting for school-level differences in poverty, secondary schools on average had a higher OSS incident rate compared to elementary schools, the average African American OSS incident rate was greater than the other three racial groups, and differences by race and school type

interacted with each other ($F = 6.509, p < .001$). Post hoc results show that at the elementary school level, the average African American incident rate was significantly higher than the other three racial groups, which were not statistically different from each other. At the secondary school level, however, the average African American incident rate was higher than the White and Multiracial rates, but not statistically different from the Hispanic rate. For expulsion (second half of table 1), the analysis revealed only a main effect for school type such that secondary schools on average had higher expulsion incident rates compared to elementary schools ($F = 9.384, p < .001$). There was no significant effect by race, nor a significant interaction effect.

In terms of school achievement passing rates (Table 2), the data revealed that while controlling for school poverty, school type and race significantly interacted with each other ($F = 26.921, p < .001$). At the elementary school level, average White passing rates were significantly higher than the other three racial groups' passing rates, which were not statistically different from each other. At the secondary school level, the average White passing rates remained the highest among the racial groups, but the African American average passing rate was significantly lower than all other racial groups, while the average Hispanic and Multiracial passing rates were not statistically different from each other. The analysis also illustrated a main effect for school type and race such that elementary schools had higher overall achievement scores than secondary schools, and all four racial group's mean passing rates differed significantly from each other (i.e., White greater than Multiracial greater than Hispanic greater than African American).

Relationship between Achievement and Discipline Controlling for Socio-Demographics

The main question of interest in this investigation was the relationship between school discipline and academic achievement, controlling for socio-demographic variables. To what extent does rate of out-of-school suspension relate to a school's academic achievement prior to and after accounting for the effects of socio-demographic factors? The first OLS regression model addresses the relationship between school rates of out-of-school suspension and mean school achievement, controlling for socio-demographic factors; results are presented in Table 3. In the first block (Model A), out-of-school suspension incident rates significantly predicted school achievement passing rates ($\beta = -.414$), accounting for 17.1% of the total variation in achievement passing rates.

The second suspension model (Model B) which includes socio-demographic variables, accounted for a moderately high amount of the total school variation in achievement scores (Adjusted $r^2 = 53.2\%$), explaining an additional 36.1% of the total variation. A school's poverty rate ($\beta = -.523$), percent minority ($\beta = -.182$), and school type ($\beta = -.161$), all accounted for a unique share of the school variation in predicting school achievement scores. The results also show that a school's out-of-school suspension rate ($\beta = -.190$), predicted a unique amount of the variance in achievement scores even after accounting for the influences of poverty, minority composition, and school type.

Table 4 presents the results of a second OLS regression model, retaining the variables in the first analysis, while adding a school's rate of expulsion to the predictor variables. Note that since expulsions are less common, especially at the elementary level, the number of schools included in the equation drops from 1,651 to 635, and the sample consists primarily of secondary schools. The first suspension and expulsion model

(Model A), showed that both a school's expulsion ($\beta = -.185$) and out-of-school suspension ($\beta = -.441$) incident rate predict some variation in achievement passing rates (Adjusted $r^2 = 29.5\%$).

The second suspension and expulsion model (Model B) was again significant ($F = 268.524, p < .001$), and was able to account for a relatively high amount of the total school variation in achievement scores (Adjusted $r^2 = 67.8\%$). Similar to the first model, all predictor variables entered the equation as significant predictors ($p < .01$) with poverty rate ($\beta = -.586$), percent minority ($\beta = -.192$), and school type ($\beta = -.098$), all accounting for a unique share of the school variation in predicting school achievement scores. Adding socio-demographics explains an additional 38.3% of the variation in passing rates.

Model B of table 4 shows that a school's expulsion rate ($\beta = -.215$) and out-of-school suspension rate ($\beta = -.078$) contribute to the percent of students passing the assessment independently of other variables. The strength of out-of-school suspension in predicting achievement was reduced in comparison to the first equation, but remains significant. Thus, among schools using expulsion, higher rates of out-of-school suspension and expulsion predict lower percentages of students passing the accountability assessment, independent of socio-demographic influences.

Discussion

In this study, we explored the relationships among achievement, school discipline and race, when accounting for a number of socio-demographic variables. As has been documented extensively in previous investigations (see Skiba et al., 2002 and Skiba & Rausch, 2006 for reviews), out-of-school suspension rates differed significantly by race at both the elementary and secondary level. There were, however, no significant racial

disparities for expulsion at either the elementary or secondary level. Racial differences in suspension incident rates remain across school differences in poverty; African Americans had significantly higher out-of-school suspension incident rates at the elementary school level, and African Americans and Hispanics had higher rates at the secondary school level even after accounting for school poverty variability.

Similarly, racial differences in academic achievement were found in this study, independent of school variation in poverty. Achievement passing rates for racial minority students in this state (Multiracial, Hispanic, and African American), were lower than White rates at both the elementary and secondary school level. Further, achievement differences appear to be the most pronounced for African Americans at the secondary school level. The mean school-level achievement rates for racial minority groups were statistically equivalent at the elementary school level; however, while the mean achievement rates were lower for secondary schools compared to elementary schools for all racial groups, this achievement difference was the most marked for African Americans, lower by 17 points.

The belief that racial disparities in achievement and discipline can be explained in large measure by socioeconomic disparities among students from various racial/ethnic groups is widely held among both researchers (MacMillan & Reschly, 1998) and practitioners (Skiba, Simmons, Ritter, Kohler, & Wu, 2003). Yet a large and growing research base continues to illustrate that while poverty accounts for some of the differences in discipline or academic achievement by race, it in no way explains all or even most of the variance (McGee, 2004; Myers, Kim, & Mandala, 2004; Ogbu, 2003; Perry, Steele, & Hilliard III, 2003). Skiba et al. (2002) demonstrated that indicators of

poverty explained a very small proportion of the variance in the relationship between race and suspension or expulsion. Similar findings have obtained in investigations of special education disproportionality, in which poverty has been found to have a weak, inconsistent, and often theoretically counterintuitive effect (Coutinho, Oswald, & Best, 2002; Losen & Orfield, 2002; Oswald, Coutinho, Best, & Singh, 1999; Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005).

This study was designed to provide data bearing upon two countervailing accounts of the possible relation between disciplinary removal and school achievement, that (a) removal for disciplinary purposes through suspension or expulsion will improve a school's learning climate by removing troublemakers or deterring future misbehavior, vs. (b) removal for disciplinary purposes may have a negative effect on school learning by reducing student opportunity to learn. The results from this study provide no support for the hypothesis that suspension and expulsion positively effects school achievement, whether that be by removing sources of disruption from the learning environment, or functioning as a deterrent for misbehavior. Rather, these results are consistent with previous research that has pointed to a negative relationship between exclusionary discipline and positive school outcomes (Davis & Jordan, 1994; Raffaele Mendez, 2003; Skiba & Rausch, 2006; Tobin et al., 1996; Wald & Losen, 2003). Further, these results advance previous findings by demonstrating that this relationship cannot be fully accounted for by school-level poverty or other demographic variables.

Results of two regression equations show that school use of out-of-school suspension and expulsion is negatively related to achievement, even when socio-demographic variables are held constant. While socio-demographic variables account for

36% to 38% of the variation in achievement passing rates, they do not fully explain the relationship between discipline and achievement. After accounting for the influence of a school's poverty rate, out-of-school suspension is the next strongest predictor of achievement, even stronger than a school's percent minority enrollment and level (elementary vs. secondary). Among schools for which expulsions are reported (primarily secondary schools) the school expulsion incident rate is also the second strongest predictor of achievement.

The use of suspension or expulsion as a disciplinary consequence does not in and of itself indicate the degree of adherence to a broader philosophy of zero tolerance in any particular school. That is, a high rate of student suspensions and expulsions could be based on a specific disciplinary philosophy (see e.g., Ewing, 2000), or it may simply reflect a perceived absence of alternative strategies for addressing student discipline or school climate (Skiba & Rausch, 2006). Regardless of the degree of overlap between practice and philosophy, however, the use of suspension and expulsion implies a belief that removing certain students from the learning environment is necessary or valuable in order to improve the learning climate for students who remain.

It is precisely this assumption that is not supported by data indicating a relationship between school exclusion and achievement. While not conclusive of any particular causal relationship, these data do not tend to support assumptions underlying the use of school exclusion as a disciplinary tool. That is, it is difficult to argue that removing disruptive students from school improves the learning climate when schools with higher rates of suspension and expulsion evidence less satisfactory achievement outcomes. The use of suspension and expulsion may or may not have a direct effect on

school achievement outcomes, but these results argue that, regardless of a school's socio-demographic status or level, removing perceived troublemakers through suspension and expulsion does *not* contribute to improved learning outcomes, as measured by achievement indicators.

While this study did not directly explore variables that might explain the negative relationship between exclusionary discipline and school achievement, there may be a number of hypotheses about why these constructs are negatively related. These include (1) the relationship between externalizing behaviors and academic skill deficits, (2) suspension and expulsion as directly limiting student opportunity to learn, or (3) suspension and expulsion as markers for poor school climates and resource deficiencies.

Externalizing Misbehavior and Academic Skill Deficits

The relationship between school discipline and school-wide achievement outcomes found in this and other studies could be due to the well documented relationship between student externalizing behavior and academic skill deficits (Cairns & Cairns, 2000; Nelson, Benner, Lane, & Smith, 2004; Roeser & Eccles, 2000). Students experiencing academic skill deficits are more likely to engage in disruptive classroom behavior (Lopes, 2005); a functional assessment model might postulate that students with poor academic skills are engaging in disruption in order to *escape* academic demands (Jones & Jones, 2004; Luiselli, 2002; Sterling-Turner, Robinson, & Wilczynski, 2001). Thus, schools serving students with lower academic skills would be expected to have higher rates of suspension and expulsion in response to disruptive behavior. To the extent that suspension and expulsion could be seen as solely a response to student misbehavior,

the findings of these analyses provide further evidence of the relationship between poor academic skills and school disruption as a class of escape behavior.

Previous studies of school usage of suspension and expulsion suggests, however, that a school's use of suspension and expulsion is not simply a direct administrative response to student externalizing behavior problems. To be sure, some portion of a school's suspensions and expulsions are due to student misbehavior and anti-social attitudes (Morgan-D'Atrio, Northrup, LaFleur, & Spera, 1996; Tobin et al., 1996; Wu et al., 1982). Yet administrative responses to student behavior represent a complex and multi-determined process (Morrison & Skiba, 2001). Thus, studies have also found rates of disciplinary removal at the school level to be (1) extremely inconsistent from school to school even given a similar student population (Massachusetts Advocacy Center, 1986; Mukuria, 2002; Skiba et al., 1997), (2) strongly related to school factors independent of individual student factors such as teacher attitudes, administrative centralization, and school governance (Wu et al., 1982), and (3) attributable to variability in principal attitudes toward discipline (Advancement Project/Civil Rights Project, 2000; Mukuria, 2002; Skiba et al., 2003). To the extent that school disciplinary responses represent a *choice* on the part of those administering consequences, it is appropriate to consider systems-level explanations of the negative relationship between suspension/expulsion rates and school achievement.

Suspension and Expulsion Directly Limiting Student Opportunity to Learn

As noted in the introduction, it is possible that suspension and expulsion have a direct negative effect on achievement by reducing student opportunity to learn. While the relationship between opportunity to learn and academic outcomes has been extensively

documented (Brophy, 1988; Brophy & Good, 1986; Carter, 1984; Cooley & Leinhardt, 1980; Fisher et al., 1981; Greenwood et al., 2002; Stallings et al. 1978; Wang et al., 1997), the *absolute amount* of time spent academically engaged needed to guarantee satisfactory academic outcomes has not been explored, and may be child-specific. Thus even the loss of a relatively small number of days may create a significant disruption in academic learning time for some students. One might expect such a disruption to be especially salient for students who are already academically at-risk, or in schools in which there is a policy of not allowing students to make up and receive feedback on work during school suspension or expulsion.

It is also possible that time spent in *administering* office referrals, suspensions, and expulsions may detract from student learning time. For example, one study of an urban elementary school found that suspended students lost 12,160 minutes of class time due to office referrals, and 462 hours of class time due to suspensions (Scott & Barrett, 2004). Unfortunately, however, no data currently exist on the amount of instructional time lost by students *not* subject to disciplinary removal. It could be, for example, that the time spent by the classroom teacher administering discipline to selected students, instead of engaging all students in academic instruction, has negative academic consequences for all students. Descriptions of classrooms in which classroom management appears to be ineffective (e.g., Vavrus & Cole, 2002) suggests that, once disciplinary power struggles are engaged between students and teachers, they may substantially reduce time available for instruction.

Suspension and Expulsion as Markers for Poor School Climates and Resource Deficiencies

It is unclear, however, if the time lost by those students who are suspended and especially expelled, or even instructional time lost by non-disciplined students, could create a school-wide decrement in academic learning sufficient to explain the negative relationship of suspension and expulsion with achievement. An alternate possibility is that suspension and expulsion serve as markers for poor school climates lacking necessary resources to create effective instructional and disciplinary environments (Bickel & Qualls, 1980; Davis & Jordan, 1994; Ma & Willms, 2004; Skiba et al., in press; Wu et al., 1982). For example, Davis and Jordan (1994) found that schools with higher rates of suspension and expulsion paid more attention to disciplinary matters, and less to climate issues. Similarly, Wu et al. (1982) found that the probability of being suspended was negatively related to the quality of school governance at the school level. Ma and Willms (2004) found that 8th grader's perceptions of their school's disciplinary climate, especially perceptions about classroom disruptions, were related to a school's mathematics, science, reading, and history achievement, even after adjusting for individual student characteristics (i.e., socioeconomic status, race, and sex) and school level socioeconomic status.

Such findings might suggest that inadequate school climate due to insufficient resources could create both an increase in suspension/expulsion and a decrement in school achievement. Thus, the presence of additional resources for managing disruptive behavior may lead to both a reduction in school rates of suspension and expulsion *and* improved academic outcomes. Fleming et al. (2005) found that preventative interventions that diminish disruptive behavior and increase social and emotional skills are positively related to student achievement even after accounting for prior achievement and

demographic influences. In a case study of one school, Rausch and Skiba (2004) found that the extra resources associated with school-community partnerships and school governance re-organization were associated with sustained lower suspension and expulsion rates *and* consistently higher school achievement passing rates.

In summary, the negative relationship between the use of exclusionary discipline and school achievement could be explained at a variety of levels. To the extent that school discipline is considered to be a direct function of student behavior, unmediated by the constitutive actions of school personnel (Mehan, 1992), these data merely confirm a functional analysis of disruptive behavior as an escape response in the face of poor academic skill (Jones & Jones, 2004; Luiselli, 2002; Sterling-Turner et al, 2001). To some extent, however, the use of disciplinary exclusion appears to represent a multi-determined process, and a choice on the part of school personnel (Morrison & Skiba, 2001). To the extent that disciplinary exclusion co-varies with systemic variables as well as student behavior, it appears to create a paradoxical effect in its association with poorer levels of school-wide academic performance; that is, schools with higher usage of school suspension and expulsion appear to have less satisfactory achievement outcomes, regardless of socio-demographic influences. This effect may be relatively direct by reducing opportunity to learn, or indirect, as poor school climates due to inadequate resources create both increases in school disruption and decreases in academic outcomes. Further research describing the micro-level variables that may determine the discipline/achievement relationship will be necessary in order to choose among such explanations.

Limitations and Conclusion

The unit of analysis for this study was at the school, not the individual student level. It is unclear to what extent individual level achievement-discipline relationships would differ from the school level findings reported herein. While it is plausible to assume that the achievement-discipline relationship at the school level is due in part to individual level achievement-discipline relationships, previous research suggests that school effects would likely remain even after controlling for intraindividual effects. In a regression model including both individual and school effects on suspension, Wu et al. (1982) found that the effects of school-level variables (overall school suspension rate, teacher attitudes, administrative centralization, school governance, perceptions of achievement, socioeconomic disadvantage, and racial status) far outweighed individual level student attitude and misbehavior as predictors of suspension.

Finally, these findings may have important implications relating to current policy pressures to improve student achievement outcomes as assessed by state standardized accountability examinations. It has been suggested that the increased academic focus necessitated by accountability planning may increase the resistance of some schools to consider new programs designed to improve school disciplinary indicators if these programs are not viewed as directly relating to improved academic outcomes (see e.g., Elmore, 2004). The results of the current study suggest, however, the perception that time spent in improving academic outcomes and improving exclusionary discipline outcomes are somehow in contradiction is probably in error. Rather, the data suggest that programming focused on improving disciplinary indicators or climate (Ma & Willms, 2004), and enhancing the social emotional skills of students (Fleming et al., 2005) may

assist in achieving the improved academic outcomes mandated by federal and state accountability requirements.

In conclusion, the results of this study add to a large and growing body of research (Noguera, 1995; Raffaele Mendez et al., 2002; Skiba & Rausch, 2006; Wald & Losen, 2003) calling into question the presumption that frequent school exclusion as part of a school's disciplinary system contributes to an improved learning climate. The current evidence calls attention to the unintended consequences of policies meant to preserve school safety. There can be little doubt that schools have a responsibility to use effective methods to create and maintain safe school climates that are conducive to learning. But these results suggest that policies and practices that create more student removal from the opportunity to learn are more likely to create paradoxical detrimental effects on student learning. As schools increasingly attend to the responsibility of educating students, it appears clear that attaining the goal of high achievement for all students cannot be accomplished without attending to the need for evidence-based and preventive strategies to maintain school climates conducive to learning.

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Endnotes

¹ Only grades 3, 5, 8, and 10 took the state accountability examination for the year of this study.

² The few schools that did not fit this classification system (e.g., schools serving grades 1-6, 6-12, or 1-12 for example) were classified as either elementary or secondary based on the total number of students served in elementary or secondary grades. For example, a school serving students in grades one through six who had 300 students in grades one through 5 and 50 students in grade 6 was classified as elementary.

³ The Games-Howell post hoc technique was used because unlike other ANOVA post hoc techniques (e.g. Sheffe'), it does not assume equal variances across groups.

Table 1. Out-of-School Suspension and Expulsion Incident Rates by School Type and Race Adjusted for Poverty ^a

| Variable | Estimated Marginal Mean ^b | F | Games-Howell Post Hoc |
|--|---|----------|--------------------------|
| <i>Out-of-School Suspension Incident Rate Per 100 Students</i> | | | |
| School Type | | | |
| Elementary | 5.60 | 249.27** | |
| Secondary | 34.00 | | |
| Race | | | |
| White (W) | 12.07 | 17.010** | AA>H,MR,W; H>W |
| African American (AA) | 29.52 | | |
| Hispanic (H) | 19.72 | | |
| Multiracial (MR) | 17.91 | | |
| School by Race Interaction | | | |
| Elementary | | 6.509** | |
| White | 3.38 | | AA>MR,H,W |
| African American | 10.62 | | |
| Hispanic | 3.55 | | |
| Multiracial | 4.87 | | |
| Secondary | | | |
| White | 20.76 | | AA>MR,W |
| African American | 48.42 | | |
| Hispanic | 35.89 | | |
| Multiracial | 30.95 | | |
| <i>Expulsion Incident Rate per 100 Students</i> | | | |
| School Type | | | |
| Elementary | 0.49 | 9.384** | |
| Secondary | 1.83 | | |
| Race | | | |
| White | 0.76 | 1.651 | |
| African American | 1.95 | | |
| Hispanic | 0.85 | | |
| Multiracial | 1.08 | | |
| School by Race Interaction | | | |
| Elementary | | 0.586 | |
| White | 0.26 | | |

| | |
|-----------------------|------|
| African American | 1.64 |
| Hispanic | 0.01 |
| Multiracial | 0.06 |
| Secondary School Rate | |
| White | 1.26 |
| African American | 2.26 |
| Hispanic | 1.69 |
| Multiracial | 2.10 |

^a Covariate (poverty) is the school's percent of students receiving free or reduced lunch meals.

^b Estimated marginal mean values represent the mean incident rates per 100 students for schools adjusted for the school's poverty rate. For example, the mean expulsion incident rate among all secondary schools was 1.83 incidents per 100 students. The measure does not provide data on number of individual students disciplined (e.g. it should not be interpreted as indicating that 1.83 out of every 100 secondary school students were expelled).

Note: Overall mean out-of-school suspension incident rate is 16.94 incidents per 100 students and expulsion incident rate is 1.64 incidents per 100 students.

A Bonferroni adjustment for multiple comparisons was applied. Thus only significant results (p<.001) are reported.

** p<.001

Table 2. Percent Passing State Accountability Examination by School Type and Race Adjusted for Poverty^a

| Variable | Estimated Marginal Mean ^b | F | Games-Howell Post Hoc |
|-----------------------------------|--------------------------------------|-----------|-----------------------|
| School Type | | | |
| Elementary | 60.34 | 78.396** | |
| Secondary | 51.48 | | |
| Race | | | |
| White (W) | 69.43 | 486.669** | W>MR>H>AA |
| African American (AA) | 45.87 | | |
| Hispanic (H) | 52.22 | | |
| Multiracial (MR) | 56.11 | | |
| School by Race Interaction | | 26.921** | |
| Elementary | | | |
| White | 72.46 | | W>MR,H,AA |
| African American | 54.32 | | |
| Hispanic | 55.94 | | |
| Multiracial | 58.63 | | |
| Secondary | | | |
| White | 66.41 | | WH>MR,H>AA |
| African American | 37.42 | | |
| Hispanic | 48.51 | | |
| Multiracial | 53.59 | | |

^aCovariate (poverty) is the school's percent of students receiving free or reduced lunch meals.

^bEstimated marginal mean values represent the mean passing percentages by school adjusted for a school's poverty rate. For example, the estimated marginal mean achievement among all secondary schools was 51.48. This mean percent does not provide the percent of individual students passing the assessment (e.g. it should not be interpreted as indicating that 51.48% of all secondary students passed the assessment; rather the average estimated passing rate for secondary schools is 51.48%).

Note: Overall mean achievement rate is 63.52%.

A Bonferroni adjustment for multiple comparisons was applied. Thus only significant results ($p < .001$) are reported.

** $p < .001$

Table 3. OLS Regression Predicting Percent of Students Passing English/Language Arts and Math Sections of the State Accountability Exam: Out-of-School Suspension

| Variable | B (SE.B) | β | t-value |
|--|------------------|---------|-----------|
| Model A (Suspension Only)^a | | | |
| Out-of-School Suspension Incident Rate | -.266 (.014) | -.414 | -18.584** |
| Model B (Suspension and Socio-Demographics)^b | | | |
| <i>School Discipline</i> | | | |
| Out-of-School Suspension Incident Rate | -.121 (.012) | -.190 | -9.749** |
| <i>Socio-Demographics</i> | | | |
| Poverty Percent | -.363 (.016) | -.523 | -22.161** |
| Minority Student Percent | -.114 (.014) | -.182 | -7.856** |
| School Type (0-Elementary; 1-Secondary) | -5.124 (.610) | -.161 | -8.407** |

^a Multiple R=.414 (F = 345.382**); Root MSE = 14.38; R^2 = .171; Adjusted R^2 = .171

^b Multiple R=.730 (F = 475.871**); Root MSE = 10.80; R^2 = .533; Adjusted R^2 = .532;

F Change = 430.142**, R^2 Change = .361

Note. Standard errors of the unstandardized regression coefficients are in parentheses

* p <.01 ** p <.001

Table 4. OLS Regression Predicting Percent of Students Passing English/Language Arts and Math Sections of the State Accountability Exam: Out-of-School Suspension and Expulsion

| Variable | B (SE.B) | β | t-value |
|--|-------------------|---------|-----------|
| Model A (Discipline Only)^a | | | |
| Expulsion Incident Rate | -1.593 (.316) | -.185 | -5.040** |
| Out-of-School Suspension Incident Rate | -.248 (.021) | -.441 | -12.007** |
| Model B (Discipline and Socio-Demographics)^b | | | |
| <i>School Discipline</i> | | | |
| Expulsion Incident Rate | -1.855 (.215) | -.215 | -8.616** |
| Out-of-School Suspension Incident Rate | -.044 (.016) | -.078 | -2.691* |
| <i>Socio-Demographics</i> | | | |
| Poverty Percent | -.453 (.027) | -.586 | -17.026** |
| Minority Student Percent | -.123 (.022) | -.192 | -5.705** |
| School Type (0-Elementary; 1-Secondary) | -5.060 (1.303) | -.098 | -3.882** |

^a Multiple R = .545 (F = 133.536**); Root MSE = 13.321; R^2 = .297; Adjusted R^2 = .295

^b Multiple R = .825 (F = 268.524**); Root MSE = 8.997; R^2 = .681; Adjusted R^2 = .678; F Change = 250.678**; R^2 Change = .383

Note. Standard errors of the unstandardized coefficients are in parentheses

* $p < .01$ ** $p < .001$